

**ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
AIR QUALITY CONSTRUCTION PERMIT**

Permit No. 311CP03
Rescinds Permit No. 0071-AC015

Date: April 18, 2002

**PETRO STAR VALDEZ INC.
VALDEZ REFINERY
MODIFICATION PROJECT**

The Department of Environmental Conservation (Department), under the authority of AS 46.03, AS 46.14, AS 44.19, 6 AAC 50 and 18 AAC 50.315, issues an Air Quality Construction Permit to:

**Owner/Operator: Petro Star Valdez, Inc.
201 Arctic Slope Avenue, Suite 200
Anchorage, Alaska 99518**

**Facility Location: Mile 2.5 Dayville Road, Valdez, Alaska 99686
T9S R6W, Copper River Meridian Lot 1 USS 630.**

The Department authorizes the Permittee to change the facility in accordance with the terms and conditions of this permit, and as described in the original permit application and supplements listed in Exhibit A.

John F. Kuterbach, Program Manager
Air Permits Program

Date

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PERMIT TERMS AND CONDITIONS

A. 18 AAC 50.340(i): Permit Continuity

1. This permit rescinds and replaces Air Quality Control Construction Permit No. 0071-AC015, issued October 30, 2000.
2. Except as revised or rescinded herein or as superseded by an Air Quality Permit issued under AS 46.14.170, the Permittee shall comply with terms and conditions of Air Quality Control Permit to Operate No. 9471-AA036.
3. If permit terms and conditions listed in this permit conflict with those of Air Quality Control Permit to Operate No. 9471-AA036, Permittee shall comply with terms and conditions listed herein.
4. Exhibit A in this permit is a continuation to Exhibit A, Permit Documentation of Air Quality Control Construction Permit No. 0071-AC015.
5. Exhibit B in this permit is a revision to Exhibit C, Source Inventory, of Air Quality Control Construction Permit No. 0071-AC015, to incorporate requested modifications.
6. Exhibit B, Air Contaminant Emission Limits, Standards, Fuel Specifications, and Operating Limits, of Air Quality Control Permit to Operate No. 9471-AA036 is modified to
 - 6.1 prohibit the use of heavy atmospheric gas oil fuel (HAGO);
 - 6.2 place an owner-requested fuel use limit on the 400-hp boiler and 500 KW emergency generator as set out in Condition 37 of this permit;
 - 6.3 revise sulfur dioxide specific operation limits by Condition 45.3 of this permit;
 - 6.4 revise the firing rate of the crude heater to 153 MMBtu/hr; and
 - 6.5 revise the throughput of storage tanks to 70,000 bbl/day.
7. Conditions concerning fuel nitrogen content monitoring as set out in Air Quality Control Permit to Operate No. 9471-AA036 are modified as follows:
 - 7.1 Exhibit C, Process Monitoring and Source Testing Requirements, of Air Quality Control Permit to Operate No. 9471-AA036 is revised to removed the light atmospheric gas oil (LAGO), HAGO, and naphtha fuel nitrogen content testing requirement; and

- 7.2 Condition 27 of Permit to Operate No. 9471-AA036 is revised to remove the recording requirement of nitrogen in HAGO, LAGO, and naphtha fuels.
8. Exhibit D, Facility Operating Report, of Air Quality Control Permit to Operate No. 9471-AA036 is revised to remove reporting requirements for nitrogen in liquid fuel under parameter four, fuel quality.
9. Conditions 7, 8, and 9 of Air Quality Control Permit to Operate No. 9471-AA036 are rescinded.
10. Condition 11 of Permit to Operate No. 9471-AA036 is revised to allow total product throughput for Sources 6-10 not to exceed 7,000,000 bbls per year.
11. Condition 12 of Permit to Operate No. 9471-AA036 is revised to allow total crude oil throughput for Source 13 and 15 not to exceed 25,550,000 bbls per year.
12. Condition 13 of Permit to Operate No. 9471-AA036 is revised to allow total return oil throughput for Source 14 not to exceed 18,650,000 bbls per year.

B. Standard Permit Conditions

13. The Permittee shall comply with each permit term and condition; noncompliance constitutes a violation of AS 46.14, 18 AAC 50, and the Clean Air Act and is grounds for:
- 10.1 An enforcement action;
- 10.2 Permit termination, revocation and reissuance, or modification in accordance with AS 46.14.280; or
- 10.3 Denial of an operating permit application.
14. It is not a defense in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with a permit term or condition.
15. Each permit term or condition is independent of the permit as a whole and remains valid regardless of a challenge to any other part of the permit.
16. Compliance with the permit terms and conditions is considered to be compliance with those requirements that are:
- 13.1 Included and specifically identified in the permit; or

13.2 Determined in writing in the permit to be inapplicable.

17. The permit may be modified, reopened, revoked and reissued, or terminated for cause; a request by the Permittee for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.
18. The permit does not convey any property rights of any sort, nor any exclusive privilege.
19. The Permittee shall allow an officer or employee of the Department, or an inspector authorized by the Department, upon presentation of credentials and at reasonable times, with the consent of the owner or operator, to:
 - 16.1 Enter upon the premises where a source subject to the construction permit is located or where records required by the permit are kept;
 - 16.2 Have access to and copy any records required by the permit;
 - 16.3 Inspect any facilities, equipment, practices, or operations regulated by or referenced in the permit; and
 - 16.4 Sample or monitor substances or parameters to assure compliance with the permit or other applicable requirements.
20. The Permittee shall furnish to the Department, within a reasonable time, any information the Department requests in writing to determine whether cause exists to modify, revoke and reissue, or terminate the permit, or to determine compliance with the permit; upon request, the Permittee shall furnish to the Department copies of records required to be kept; the Department, in its discretion, will require the Permittee to furnish copies of those records directly to the federal administrator.

C. Record Keeping, Reporting, and Testing Conditions

21. The Permittee shall certify all reports, compliance certifications, or other documents submitted to the Department under this permit as required by 18 AAC 50.205.
22. Except for as provided in Conditions 27 and 28, the Permittee shall submit two copies of test plans, reports, certifications, and notices required under this permit and Exhibit D and Conditions 17, 20-26, 28, 29, 31 of Air Quality Control Permit to Operate No. 9471-AA036 to the Department's Air Permits Program, 610 University Avenue, Fairbanks, AK 99709; telephone (907) 451-2139; facsimile (907) 451-2187.
23. The Permittee shall keep records of required monitoring data and support information for at least five years after the date of the collection; support information includes calibration

and maintenance records, original strip-chart recordings for continuous monitoring instrumentation, and copies of reports required by this permit. The Permittee shall keep monitoring and compliance records as required by the Clean Air Act and applicable federal air quality regulations.

24. If requested by the Department, the Permittee shall conduct source tests of unit exhausts and report results as described in 18 AAC 50.220. The Permittee shall comply with all applicable federal requirements, and shall:

24.1 Use the applicable test methods set out in 40 CFR Part 60, Appendix A, effective July 1, 1999, to ascertain compliance with applicable standards and permit requirements;

24.2 Conduct source tests of unit exhausts and report the results as described. The Permittee may propose alternative test methods if it can be shown to be of equivalent accuracy, and will ensure compliance with the applicable standards or limits. Alternative test procedures must be approved by the Department prior to the test date.

24.2.1 Nitrogen Oxides, NO_x, expressed as NO₂ (ppm, lb/MMBtu, and lb/hr): Reference Method 7E or Method 20, specified in 40 CFR 60, Appendix A;

24.2.2 Oxygen, O₂ (percent): Reference Method 3 or 3A as specified in 40 CFR, Part 60, Appendix A;

24.2.3 Stack Velocity and Volumetric Flow Rate: Reference Methods 1-4 as specified in 40 CFR, Part 60, Appendix A;

24.2.4 Particulate Matter (grains/dscf, lb/MMBtu, and lb/hr): Reference Method 5 or Method 19 as specified in 40 CFR, Part 60, Appendix A;

24.2.5 Sulfur Dioxide, SO₂ (ppm, lb/MMBtu, and lb/hr): Reference Method 6 or 6C, as specified in 40 CFR, Part 60, Appendix A; and

24.2.6 Visible Emission Surveillance (percent): Reference Method 9 as specified in 40 CFR, Part 60, Appendix A.

24.3 Except of visible emissions surveillances;

24.3.1 Submit to the Department, within 60 days after receiving a request, and at least 30 days before the scheduled date of the tests, a complete plan for conducting the source tests;

- 24.3.2 Give the Department written notice of the tests 10 days before each series; and
 - 24.3.3 Within 45 days after completion of the set of tests, submit the results, to the extent practical, in the format set out in *Source Test Report Outline* in Volume III, Section IV.3, of the State Air Quality Control Plan, adopted by reference in 18 AAC 50.030(8).
25. The Permittee may seek Department approval of alternates to the monitoring, record keeping, and reporting requirements of this permit by submitting a written request to the Department. Until the Department approves an alternative of a monitoring, record keeping, or reporting requirement, the Permittee shall comply with the requirements listed in this permit.
26. The Permittee shall install, calibrate, conduct applicable continuous monitoring system performance tests listed in 40 CFR 60, Appendix B, effective July 1, 1999, and certify test results; operate; and maintain air contaminant emissions and process monitoring equipment on the sources as described herein and in documents provided by the Permittee, listed in Exhibit A. The Permittee shall submit monitoring equipment siting, operation, and maintenance plans and procedures for approval by the Department 90 days prior to installing a new or modified system.
- For continuous emission monitoring systems, the Permittee shall comply with each applicable monitoring system requirement, as listed in 40 CFR 60.13, 60.19, the applicable subpart as incorporated by reference in Condition 36 of this permit, 40 CFR 60, Appendix F, and the *EPA Quality Assurance Handbook For Air Pollution Measurements*, EPA/600 R-94/038b. The Permittee shall attach to the Facility Operating Report required by Exhibit D of Air Quality Control Permit to Operate No. 9471-AA036, a copy of each quarterly continuous emission monitoring system data assessment report for Quality Assurance Procedures conducted in accordance with 40 CFR 60, Appendix F.
27. Excess emission reporting--Report excess emissions that present a potential threat to human health or safety as soon as possible to the Department's Division of Spill Prevention and Response (SPAR). From 8:00 AM to 4:30 PM, report the event to SPAR by telephone at (907) 269-7500, or by facsimile at (907) 269-7648. Outside of this time, report the event to SPAR by telephone at (800) 478-9300. Please provide a complete description of the event and any assistance required from the Department.
28. Excess Emission and Permit Deviation Reports.
- 28.1 Except as provided in Condition 27, the Permittee shall report all emissions or operations that exceed or deviate from the requirements of this permit as follows.
 - 28.1.1 Report as soon as possible after the event commences

- 28.1.1.1 Emissions that present a potential threat to human health or safety; and
- 28.1.1.2 Excess emissions which the permittee believes to be unavoidable;
- 28.1.2 Within two days of discovery, report:
 - 28.1.2.1 Excess emissions measured or observed, and
 - 28.1.2.2 Operation in excess of permit requirements under this permit for
 - ? allowable fuel quality or quantity,
 - ? allowable hours of operation,
 - ? any other limitation used to avoid a classification by limiting the facility's potential to emit,
 - ? any other limitation used to assure compliance with ambient air quality standards or maximum allowable increases,
 - ? Reasonable precautions to prevent fugitive dust;
- 28.1.3 No later than 30 days after the end of the month in which the deviation was discovered, report the failure to monitor emissions, and
- 28.1.4 Report all other deviations with the next facility operating report;
- 28.2 The report must include the form contained in Exhibit C of this permit, and provide all information listed on the form.
- 28.3 If requested by the department, provide a more detailed written report as requested to follow up the excess emission report.
- 29. Keep a copy of this permit, the State Air Quality Control Regulations 18 AAC 50, and Alaska Statutes 46.14, at the permitted facility.

D. Operating Conditions

- 30. The Permittee is authorized to modify Source No. 1 and install Source No. 15 and 16 at the Petro Star Valdez Refinery as follows:

Source	Description	Year Installed	Rating
1. Crude Heater	G.C. Broach Direct Fired Crude Charge Heater	1999	153 MMBtu/hr
15. Crude Storage tank	Internal floating roof	2001	60,000 bbl
16. Emergency Diesel Engine	Caterpillar, 3406B DITA	2001	260 hp

31. Operate each source in compliance with the applicable emission standards specified by 18 AAC 50.040-.070, by an applicable federal New Source Performance Standard (NSPS), or the requested emission limits.
32. Keep and follow a preventative maintenance program for each source listed in Exhibit A of Permit to Operate No. 9471-AA036. Keep a copy of the procedures available at a location within the facility that is readily accessible to operators of the equipment and to authorized representatives of the Department.

E. 18 AAC 50.010: Ambient Air Quality Standards and Increments

33. Ambient air quality compliance for facility operation is demonstrated at the facility fence-line.
34. The Permittee shall not interfere with the attainment or maintenance of the Ambient Air Quality Standards listed in 18 AAC 50.010, and shall not cause or contribute to a violation of the maximum allowable ambient concentrations (the PSD increments) listed in 18 AAC 50.020 as follows:
 - 34.1 Except as provided for in Condition 34.2, construct and operate the facility in accordance with this permit and application;
 - 34.2 Notify the Department prior to making any change at the facility that deviates from the permit and application, such as changes in equipment size, configuration, or location.
 - 34.2.1 For changes under 18 AAC 50.370(a), the Permittee may notify the Department under 18 AAC 50.370(b) and may implement the changes in accordance with 18 AAC 50.370(c);
 - 34.2.2 For other changes:
 - 34.2.2.1 Ask the Department if proposed change warrants additional ambient impact assessment modeling;
 - 34.2.2.2 Within 60 days upon receiving written Department notice that modeling is warranted, prepare and submit to the Department an ambient impact assessment for the specified air contaminant and averaging period;
 - 34.2.2.3 The Permittee shall not make the change until the Department concurs the change will not interfere with attainment or maintenance of ambient standards and increments.

- 34.3 Limit fuel sulfur content to no more than 0.25% by weight for fuel oil burned in Sources 2, 3, 4 and 16.

F. Limits to Avoid Classification as a Major Facility under 18 AAC 50.300(c)(2)

At the request of the Permittee, this condition limits the emissions of NO_x from the facility to prevent its classification as a PSD major facility.

35. Sources Nos. 1-4 and 16:

- 35.1 Do not burn HAGO;

36. Source No. 1

- 36.1 Limit emissions to no more than 79 tons of NO_x in any 12-consecutive month period;

- 36.2 Permittee is authorized to burn diesel fuel, light straight run (LSR), and fuel gas with the following restrictions:

- 36.2.1 Diesel Fuel - burn no more than 166,000 gallons in any 12-consecutive month period (equivalent to 0.83 tons of NO_x);

36.3 Monitoring Requirements:

- 36.3.1 Measure and record the time and duration for which Petro Star Valdez, Inc. accepts waste heat from the CVEA Cogeneration Project, and the quantity of each fuel burned, gallons of liquid fuels and scf of fuel gas. Calculate and record the monthly and 12-month rolling total fuel consumption for each type of fuel burned. In the calculation, do not include months before May 26, 1999;

- 36.3.2 Measure and record the time and duration for which Petro Star Valdez, Inc. does not accept waste heat from the CVEA Cogeneration Project, and the quantity of each fuel burned, gallons of liquid fuels and scf of fuel gas. Calculate and record the monthly and 12-month rolling total fuel consumption for each type of fuel burned. In the calculation, do not include months before May 26, 1999;

- 36.3.3 Calculate and record the NO_x emissions for each calendar month based on the fuel consumption measured in Conditions 36.3.1 and 36.3.2 and the specific emission factors as follows:

- 36.3.3.1 For LSR and fuel gas consumption, use the most recent

Department approved site-specific emission factors developed from emission source tests conducted as set out in Condition 36.5, dependent upon operation of the waste heat recovery system; and

36.3.3.2 For LAGO use diesel fuel an AP-42 emission factor of 10 lb of NO_x per 1,000 gallons of fuel;

36.3.4 Calculate and record the 12-month rolling total NO_x emissions by summing monthly emissions from the source using each fuel.

36.4 Reporting Requirements:

36.4.1 Report the 12-month rolling total NO_x emissions from Source No. 1;

36.4.2 Report the 12-month rolling total diesel consumption for Source No. 1; and

36.4.3 Report as excess emissions fuel consumption and NO_x emissions greater than those specified in Conditions 36.1 and 36.2 of this permit.

36.5 Performance Test Requirements – Permittee shall conduct three performance tests at highest operational level on Source 1 within 180 days after PSVR starts to increase throughput above existing limits. Conduct one set with waste heat burning fuel gas, one set without waste heat burning the maximum amount LSR, and one set without waste heat burning fuel gas. Each set of source tests shall be conducted as follows:

36.5.1 Test Plan – submit a plan as set out in Condition 22;

36.5.2 Test Methods –perform all tests in accordance with procedures outlined in 40 CFR 60, Appendix A. Use Method 7E to determine NO_x emission concentrations. Use Methods 1-4 to determine exhaust parameters for calculating NO_x emission rates;

36.5.3 Operating Conditions – When performing a test while accepting waste heat, simultaneously measure the NO_x emission rates and concentrations at the inlet and outlet of the source, except as authorized by the Department's emission source test observer to an alternative source test plan;

36.5.4 Special Requirements:

36.5.4.1 Measure and record consumption of LSR and fuel gas during each test;

36.5.4.2 When conducting tests during waste heat recovery, measure and record the power production, fuel consumption, and turbine speed of the CVEA turbine(s);

36.5.5 Submit a test report of results as set out in Condition 24.

36.5.6 Frequency – After the initial source tests, perform additional tests (subsequent tests need only be conducted for the worst-case emissions scenario) that comply with Condition 36.5 no less than:

36.5.6.1 Once every 3 years, except as set out below;

36.5.6.2 Once every 12 months, if total NO_x emissions calculated in Condition 36.3.4 are greater than or equal to 71 (90% of 79) tons per 12-month rolling period for any time period in the year.

37. For Sources No. 2 and 3:

37.1 Limit emissions to no more than a cumulative total of 2.7 tons of NO_x in any 12 consecutive month period.

37.2 Permittee is authorized to burn diesel fuel with the following restrictions:

37.2.1 Source No. 2 - burn no more than 133,000 gallons of diesel fuel in any 12 consecutive month period (equivalent to 1.6 tons of NO_x); and

37.2.2 Source No. 3 - burn no more than 88,000 gallons of diesel fuel in any 12 consecutive month period (1.1 tons of NO_x).

37.3 Monitoring Requirements:

37.3.1 Measure and record the gallons of fuel burned in each of Sources No. 2 and 3. Calculate and record the monthly and 12-month rolling total fuel consumption for each source. In the calculation, do not include months before May 26, 1999;

37.3.2 Calculate and record NO_x emissions from each source for each calendar month based on the fuel consumption measured in Conditions 37.3.1 and an AP-42 emission factor of 24 lb of NO_x per 1,000 gallons of fuel;

37.3.3 Calculate and record the cumulative 12-month rolling total NO_x emissions by summing monthly emissions from each source.

37.4 Reporting Requirements:

- 37.4.1 Report the cumulative 12-month rolling total NO_x emissions from Sources No. 2 and 3;
- 37.4.2 Report the 12-month rolling total diesel consumption for each of Sources No. 2 and 3; and
- 37.4.3 Report as excess emissions fuel consumption and NO_x emissions greater than those specified in Conditions 37.1 and 37.2 of this permit.

38. For Source No. 4 and 16:

- 38.1 Limit emissions to no more than cumulative total of 2.3 tons of NO_x in any 12 consecutive month period.
- 38.2 Permittee is authorized to burn diesel fuel with the following restrictions:
 - 38.2.1 Source No. 4 - burn no more than 7,640 gallons of diesel fuel in any 12 consecutive month period (equivalent to 1.7 tons of NO_x); and
 - 38.2.2 Source No. 16 - burn no more than 1,980 gallons of diesel fuel in any 12 consecutive month period (0.6 tons of NO_x).
- 38.3 Monitoring Requirements:
 - 38.3.1 Measure and record the gallons of fuel burned in Source No. 4 and 16. Calculate and record the monthly and 12-month rolling total fuel consumption. In the calculation, do not include months before May 26, 1999;
 - 38.3.2 Calculate and record NO_x emissions for each calendar month based on the fuel consumption measured in Conditions 37.3.1 and
 - 38.3.2.1 AP-42, Table 3.4-1 emission factor of 3.2 lb of NO_x per MMBtu for Source 4;
 - 38.3.2.2 AP-42, Table 3.3-1 emission factor of 4.41 lb of NO_x per MMBtu for Source 16
 - 38.3.3 Calculate and record the 12-month rolling total NO_x emissions by summing monthly emissions from the source.

38.4 Reporting Requirements:

- 38.4.1 Report the 12-month rolling total NO_x emissions from Source No. 4 and 16;
- 38.4.2 Report the 12-month rolling total diesel consumption for Source No. 4 and 16; and
- 38.4.3 Report as excess emissions fuel consumption and NO_x emissions greater than those specified in Conditions 38.1 and 38.2 of this permit.

G. 18 AAC 50.040: Federal Standards Adopted by Reference

Source 1, 3, 6-15, and Refinery Wide:

- 39. Comply with the requirements of 40 CFR 60, New Source Performance Standards (NSPS) effective July 1, 1999, as they apply to affected facilities specified in Conditions 40 through 44.
 - 39.1 Submit a copy of all NSPS reporting to the U.S. EPA Region 10 and the Department, as required by the applicable Federal standards. The Permittee may attach periodic federal reporting to the Facility Operating Report required by Exhibit D of Permit to Operate No. 9471-AA036.
 - 39.2 Notify the Department of any U.S. Environmental Protection Agency - (EPA) granted waivers of NSPS emission standards, record keeping, monitoring, performance testing, or reporting requirements within 30 days after the Permittee receives a waiver.
- 40. In accordance with 40 CFR 60, Subpart A and 18 AAC 50.040, for each construction, modification, or reconstruction of affected facilities and sources regulated under 40 CFR 60 and 61:
 - 40.1 Notify the Department and EPA:
 - 40.1.1 No later than 30 days after to construction/reconstruction commencement in accordance with 40 CFR 60.7(a)(1);
 - 40.1.2 Reserved;
 - 40.1.3 No more than 15 days after start-up in accordance with 40 CFR 60.7(a)(3);

- 40.1.4 60 days prior or as soon as practicable before modifying facilities that would be subject to NSPS as set out in 40 CFR 60.7(a)(4);
 - 40.1.5 No less than 30 days prior to conducting a demonstration of continuous monitoring system performance as set out in 40 CFR 60.7(a)(5);
 - 40.1.6 No less than 30 days prior to the anticipated date for conducting opacity observations or using a continuous opacity monitoring system required by 60.11(e)(1), as set out in 40 CFR 60.7(a)(6) and (7); and
 - 40.1.7 No less than 60 days prior to commencement of reconstruction or replacement of a facility, as defined in 40 CFR 60, notify the Department and EPA with information as set out in 40 CFR 60.14(d).
- 40.2 For affected facilities regulated under 40 CFR 60, maintain records of occurrence and duration of start-up, shut-down, or malfunction of an affected facility, control equipment, or monitoring equipment as set out in 40 CFR 60.7(b). Submit continuous monitoring system performance reports as set out in 40 CFR 60.7(c) and (d). Maintain a file of measurements as set out in 40 CFR 60.7(e);
- 40.3 For affected facilities regulated under 40 CFR 60, 60 days after achieving maximum production rate, but not later than 180 days after initial start -up, and upon the EPA Administrator's request, conduct performance tests as follows:
- 40.3.1 Notify the Department and EPA at least 30 days in advance of any performance test and opacity observation as set out in 40 CFR 60.8(d), 60.11(e)(1), and Condition 24.
 - 40.3.1.1 For Visible Determination of Smoke Emissions from Flares: Reference Method 22 as specified in 40 CFR, Part 60, Appendix A.
 - 40.3.2 Conduct performance tests and data reduction as set out in 40 CFR 60.8(b) and (f);
 - 40.3.3 Provide the Department copies of EPA administrator approvals for alternative performance testing;
 - 40.3.4 Provide sampling ports and platform(s), safe access to platforms(s), utilities, and conduct testing as set out under 40 CFR 60.8(c)(and (e); and
 - 40.3.5 Furnish the Department and EPA a copy of the performance test and opacity observations as set out in 40 CFR 60.8(a) and 60.11(e)(2)-(5).
- 40.4 At all times maintain and operate each affected facility including pollution control

equipment, as set out in 40 CFR 60.11(d);

40.5 The Permittee is prohibited from concealing a violation of any applicable NSPS standard as set out in 40 CFR 60.12;

40.6 For continuous monitoring systems and devices required under NSPS:

- 40.6.1 Ensure all systems and devices are installed, calibrated, and operational as set out in 40 CFR 60.13(b) prior to conducting a performance test under 40 CFR 60.8;
- 40.6.2 Conduct a performance evaluation of continuous emission monitoring systems (CEMS) as set out in 40 CFR 60.13(c);
- 40.6.3 Conduct daily zero and span checks of CEMS as set out in 40 CFR 60.13(d);
- 40.6.4 Ensure all continuous monitoring systems meet the minimum frequency of operation requirements set out in 40 CFR 60.13(e), and are kept in continuous operation, except for system breakdowns, repairs, calibration checks, and zero/span adjustments;
- 40.6.5 Install continuous monitoring systems to obtain representative emission or process parameters, as set out in 40 CFR 60.13(f);
- 40.6.6 Reduce continuous monitoring system data as set out in 40 CFR 60.13(h); and
- 40.6.7 Provide the Department a copy of each EPA alternative monitoring approval or relative accuracy test audit approval issued under 40 CFR 60.13(i) or (j).

41. 40 CFR 60, Subpart Dc; Source No. 3:

- 41.1 Applicability and delegation of authority, 40 CFR 60.40c. An affected facility is a steam-generating unit which commenced construction, modification, or reconstruction after June 9, 1989, and has a maximum design heat capacity between 10 and 100 MMBtu/hr;
- 41.2 Permittee shall burn as fuel in Source No. 3, diesel #2 with a sulfur content not to exceed 0.5% by weight as an alternative standard for SO₂ as set out in 40 CFR 60.42c(d);
- 41.3 Diesel #2 sulfur limits apply at all times, including start-ups, shut -downs, and malfunctions as set out in 40 CFR 60.48c(i) and 40 CFR 60.44c(h);

41.4 Monitoring, record keeping, and reporting requirements, 40 CFR 60.48c.

41.4.1 Determined compliance with diesel #2 sulfur limits, based on weight percent sulfur, by ASTM methods incorporated by reference in 40 CFR 60.17, as set out in 40 CFR 60.44c(h);

41.4.2 Record and maintain records of the amounts of fuel combusted during each day as required by 40 CFR 60.48c(g). Maintain the records in accordance with Condition 23 of this permit in order to comply with the two-year record retention schedule listed in 40 CFR 60.48c(h) and (i). Keep a copy of the monitoring waiver with the permit at the facility if a monitoring waiver has been issued by the U.S. EPA.

42. 40 CFR 60, Subpart J; Sources No. 1:

42.1 Applicability, designation of affected facility, and reconstruction. The provisions of this subpart are applicable to fuel gas combustion devices, including the crude heater and flares, except as exempted;

42.2 Permittee shall not burn in Source No. 1 fuel gas with a sulfur content greater than 230 mg/dscm as set out in 40 CFR 60.104(a)(1);

42.3 The sulfur dioxide monitoring level equivalent to the hydrogen sulfide standard under Condition 42.2 of this permit shall be 20 ppm, as set out in 40 CFR 60.105(a)(3)(ii);

42.4 Monitoring and record keeping:

42.4.1 Use a continuous emission monitor to monitor sulfur dioxide as set out in Exhibit C of Permit to Operate No. 9471-AA036, 40 CFR 60.105(a)(3), and Condition 26 of this permit, or an H₂S monitor as set out in 40 CFR 60.105(a)(4);

42.4.2 An oxygen monitor, to correct for excess air, will be included with the sulfur dioxide monitor as set out in 40 CFR 60.105(a)(3).

42.4.2.1 To determine compliance with the sulfur dioxide limit, correct SO₂ emissions for zero percent excess air, as set out in 40 CFR 60.105.

42.4.3 Evaluate performance of SO₂ CEMS as using Performance Specification 2 in 40 CFR 60.13(c). Use Methods 6 and 3 to evaluate relative accuracy as set out in 40 CFR 60.105(a)(3)(iii); or

- 42.4.4 Ensure span value for H₂S monitoring is 425 mg/dscm;
 - 42.4.5 Evaluate performance of H₂S continuous monitoring with Performance Specification 7 in 40 CFR 60, Appendix B. Use 40 CFR 60, Appendix A, Method 11, effective July 1, 1997, to evaluate relative accuracy as set out in 40 CFR 60.105(a)(4)(iii);
 - 42.4.6 Report as excess emissions under Condition 27, 40 CFR 60 Subpart A, and 40 CFR 60.7(c), rolling 3-hour periods during which SO₂ exceeds 20 ppm, or alternatively, 3-hour rolling periods during which H₂S exceeds 230 mg/dscm.
- 42.5 Test methods and procedures, 40 CFR 60.8 and 60.106:
- 42.5.1 Determine compliance with H₂S standard using 40 CFR 60, Appendix A, Method 11 as set out in 40 CFR 60.106(e), and sample for the duration as set out in 60.106(e).
43. 40 CFR 60, Subpart Kb; Sources No. 6 - 10 and 13 - 15:
- 43.1 Applicability and designation of affected facility, 40 CFR 60.110b. Volatile organic liquid storage tanks greater than 40 cubic meters in volume (10,567 gallons) for which construction, reconstruction, or modification commenced after July 23, 1984, are subject to this Subpart as listed in 40 CFR 60.110b(a).
 - 43.2 Sources No. 13 - 15 shall be equipped with either one of the following:
 - 43.2.1 A fixed roof with an internal floating roof conforming to requirements set out in 40 CFR 60.112b(a)(1)(i) through (ix);
 - 43.2.2 An external floating roof conforming to requirements set out in 40 CFR 60.112b(a)(2)(i) through (iii); and
 - 43.2.3 A closed vent system and control device conforming to requirements as set out in 40 CFR 60.112b(a)(3)(i) and (ii).
 - 43.3 Sources No. 13 - 15 shall be tested by either one of the following methods:
 - 43.3.1 For a fixed roof with an internal floating roof, Permittee shall test in accordance to 40 CFR 60.113b(a)(1) through (5).
 - 43.3.2 For an external floating roof, Permittee shall test in accordance to 40 CFR 60.113b(b)(1) through (6).

- 43.3.3 For a closed vent system and control device, Permittee shall test in accordance to 40 CFR 60.113b(c)(1) and (2).
- 43.4 For Sources No. 13 - 15, maintain a record of the Volatile Organic Liquid stored, the period of storage, and the maximum true vapor pressure of that liquid during the respective storage period pursuant to 40 CFR 60.116b(c).
- 43.5 Monitoring of operations, 40 CFR 60.116b. Pursuant to 40 CFR 60.116b(a) and (b), keep readily accessible records showing the dimension of the storage vessels and an analysis showing the capacity of the storage vessel for each storage tank greater than or equal to 40 cubic meters (10,567 gallons). Keep these records on-site for the life of each tank.
44. 40 CFR 60, Subpart GGG; Facility wide
- 44.1 Applicability and delegation of authority, 40 CFR 60.590. In a petroleum refinery, an affected facility includes compressors and all equipment within a process unit;
- 44.2 Applicable requirements for pumps, compressors, pressure release mechanisms, sampling connection systems, and valves are found in 40 CFR 60.482-1 to 60.482-8, as referenced in 40 CFR 60.592, Standards;
- 44.3 Affected facilities designated for no detectable emissions will not exceed 500 ppm VOC, as set out in 40 CFR 60.482-2(e), 40 CFR 60.482-4(a), 40 CFR 60.482-7(f);
- 44.4 A leak is a monitor reading of 10,000 ppm or greater, as set out in 40 CFR 60.482-2(b)(1), 40 CFR 60.482-7(c)(1), and 40 CFR 60.482-8(b);
- 44.5 Repair compressor, valve, pressure relief device, and connector damages no later than 15 calendar days after a leak is detected as set out in 40 CFR 60.482-3(g), 40 CFR 60.482-7(d) and (e), and 40 CFR 60.482-8(a) and (b), except as provided in 40 CFR 60.482-9;
- 44.6 Within 5 calendar days after a pressure release, establish conditions of no detectable emissions, as set out in 40 CFR 60.482-4 and detected by Condition 44.9.1 of this permit;
- 44.7 Equip each sampling connection system with a closed purge system or closed vent system, as set out in 40 CFR 60.482-5;
- 44.8 Equip each open-ended valve or line with a cap, blind flange, plug, or second valve, as set out in 40 CFR 60.482-6;

44.9 Monitoring, record keeping, and reporting:

- 44.9.1 Monitor affected facilities at Source No. 1 using Method 21 of Appendix A, as set out in 40 CFR 60.485(b)(1);
- 44.9.2 Monitor pumps and valves in light liquid service monthly, and visually inspect pumps weekly to detect leaks as set out in 40 CFR 60, 482-2(a)(1) and (2), and 40 CFR 60.482-7(a),(b) and (c);
- 44.9.3 If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method, monitor within 5 days by the method specified in Condition 44.9.1 of this permit, the pumps and valves in heavy liquid service, pressure release devices in light liquid or heavy liquid service, and flanges and other connectors;
- 44.9.4 As set out in 40 CFR 60.486(b), when a leak is detected, attach to the leaking equipment, a weatherproof and readily visible identification, marked with the equipment identification number. Permittee may remove the identification on a valve after monitoring it for two successive months and detecting no leak. Permittee may remove the identification on equipment that is not a valve, after it has been repaired;
- 44.9.5 For each leak that is detected, maintain a log for 5 years from the date of detection, including information as set out in 40 CFR 60.486(c);
- 44.9.6 For equipment subject to 40 CFR 60.482-1 to 60.482-10, maintain a log containing the information found in 40 CFR 60.486(e) for 5 years;
- 44.9.7 Maintain in an accessible log, leak sensor design criteria, explanation of design criteria, and changes in design criteria as set out in 18 AAC 50.486(h).
- 44.9.8 Comply with reporting requirements as set out in 40 CFR 60.487.
 - 44.9.8.1 Submit a semi-annual report to the Department beginning six months after the start-up date, as set out in 40 CFR 60.487. The semi-annual report should include the number of pumps, valves, and compressors in the facility, and the number of pumps, valves, and compressors where leaks were detected, as set out in 40 CFR 60.487(b) and (c).

H. 18 AAC 50.055: Industrial Processes and Fuel-Burning Equipment

For Sources No. 1-4, and 16:

45. The Permittee shall comply with 18 AAC 50.055(a)(1) for visible emissions, 18 AAC 50.055(b)(1) for particulate matter emissions, and 18 AAC 50.055(d)(3) for sulfur compound emissions as follows:

45.1 Visible emissions, excluding condensed water vapor, from an industrial process or fuel-burning equipment may not reduce visibility through the exhaust effluent by greater than 20%, for a total of more than three minutes in any one hour.

45.2 Particulate matter emitted from an industrial process or fuel-burning equipment may not exceed, per cubic foot of exhaust gas correct to standard conditions and averaged over three hours, 0.05 grains;

45.3 Sulfur dioxide emissions, averaged over three hours, from petroleum refinery fuel-burning equipment may not exceed:

45.3.1 230 mg of hydrogen sulfide per dscm (162 ppm H₂S) for equipment burning only fuel gas;

45.3.2 500 ppm for fuel-burning equipment that does not burn fuel gas. The Permittee will ensure compliance by limiting the sulfur content of LAGO to 0.5% by weight and # 1 fuel oil to 0.25% by weight; and

45.3.3 a concentration based on the allowable emissions in Conditions 45.3.1 and 45.3.2, prorated by the proportion of fuel gas and other fuels to the total fuel burned in the equipment for fuel-burning equipment that burns a combination of fuel gas and other fuels.

46. Monitoring and recording:

46.1 Conduct visible emission readings on Source No. 1 no later than 30 days after startup and no less than once every month and take corrective action. If after 12 months the Permittee records no violation as set out in Condition 45.1 of this permit, the Permittee shall perform visible emission readings no less than once every 12-consecutive months.

46.2 If visible emission readings exceed limits set out in Condition 45.1, while accepting waste heat from the CVEA turbine:

46.2.1 Determine and identify the emission unit(s) that contribute to the excess emissions and retain records regarding the determination;

- 46.2.2 If PSVR is responsible for exceeding limits set out in Condition 45.1, then take corrective action.
- 46.3 Conduct visible emission readings on Source 16 no less than once every 12 months.
- 46.4 Conduct particulate matter source tests on Sources No. 1 and 16 upon Department request as set out in Condition 24.2;
- 46.5 To ensure compliance with sulfur compound emission standards in Condition 45.3:
 - 46.5.1 For diesel fuel, conduct monthly fuel sulfur tests using appropriate sulfur analysis test methods listed in the latest version of ASTM D396; and
 - 46.5.2 For fuel gas, determine compliance using CEMS data as set out in Condition 26 and 42.4.1 of this permit, or other appropriate methods as set out in Condition 42.4.1;
- 47. Reporting--The Permittee shall attach to the Facility Operating Report required under Condition 35 of the Permit to Operate No. 9471-AA036:
 - 47.1 The sulfur content analysis of diesel fuel. List the name of the supplier. Report any change in the type of fuel, test method, or analysis performed.
 - 47.2 NSPS Subpart J data for fuel gas monitoring as set out in Conditions 42.4 and 40.6 from the NSPS portion of this permit;
 - 47.3 Report the visible emission surveillance results within two calendar days after conducting the surveillance, if not in compliance with Condition 45.1. Identify the emission units that contribute to the excess emission.

I. 18 AAC 50.110: Air Pollution Prohibited

- 48. The Permittee shall comply with 18 AAC 50.110, which states that no person may permit any emission which is injurious to human health or welfare, animal or plant life, or property, or would unreasonably interfere with the enjoyment of life or property. The Permittee shall:
 - 48.1 Attach to the Facility Operating Report a written description of any public complaint, including the date, time, nature of complaint, and measures taken to resolve the complaint;

- 48.2 Take reasonable actions to address air pollution complaints resulting from emissions at the facility; and
- 48.3 Notify the Department in advance of any planned modification or replacement of the fuel burning equipment, which might result in increased potential air contaminant emissions. The notification must be in writing and must include a description of the proposed change, and an estimate of any change in the quantity of emissions of each regulated air contaminant that may occur as the result of the modification or replacement.

EXHIBIT A

Permit Documentation

January 17, 2002	Comments to the Preliminary Air Quality Construction Permit No. 311CP03 for the Petro Star Valdez Refinery from Ed Powell, CH ₂ M Hill.
August 28, 2001	Letter from Petro Star letter to ADEC supplement to application to add backup generator to fire pump.
August 15, 2001	Coastal Project Questionnaire from Petro Star to supplement application.
August 10, 2001	e-mail from Ed Powell, CH ₂ M Hill to ADEC to ADEC justifying Ambient Impact Modeling was not required for the project.
June 04, 2001	Construction permit application submitted to ADEC from Petro Star.

EXHIBIT B

Source Inventory

Permittee is authorized under this permit to operate the following stationary equipment, and any other existing stationary source with a rated capacity of less than 1 million British thermal units per hour (MMBtu/hr). The design rating, capacity, or throughput is set out in this Exhibit only for the purpose of aiding in the identification of the equipment.

Source Description/ Identification	Manufacturer/ Model	Installation Date	Design Capacity/ Throughput
1. Direct Fired Crude Charge Heater	G.C. Broach Heater	1999	153 MMBtu/hr
2. Utility Boiler	Cleaver Brooks CB50 Boiler	1992	50 hp
3. Utility Boiler	ABCO 400 AHO Boiler	1994	400 hp
4. Emergency Generator	Caterpillar 500 Generator Set	1992	500 kW
5. Reserved			
6. Product Storage Tank #1 – T1100	Fixed Roof Tank for Jet A / Diesel Storage	1992	50,000 bbls
7. Product Storage Tank #2 – T1102	Fixed Roof Tank for Jet A / Diesel Storage	1992	50,000 bbls
8. Product Storage Tank #3 - T1102	Fixed Roof Tank for Jet A / Diesel Storage	1999	50,000 bbls
9. Product Storage Tank #4 - T1104	Fixed Roof Tank for Jet A / Diesel Storage	1999	50,000 bbls
10. Product Storage Tank #5 – T1105	Fixed Roof Tank for Jet A / Diesel Storage	1992	30,000 bbls
11. Reserved			
12. Reserved			
13. Crude Oil Storage Tank – T1115	Internal Floating Roof Tank for Crude Storage	1992	20,000 bbls
14. Return Oil Storage Tank – T1116	Internal Floating Roof Tank for Return Oil Storage	1992	20,000 bbls
15. Crude Oil Storage Tank – T1106	Internal Floating Roof Tank for Crude Oil Storage	2001	60,000 bbls
16. Diesel Emergency Engine	Caterpillar Model 3406B DITA	2001	260 hp

EXHIBIT C
Excess Emission Form

Company Name: _____

Facility Name: _____

NOTE: Attach Additional Sheets If Necessary

Event Information:

Duration

Date: _____ Start Time (Military Time) _____ End Time _____ (hr:min) ____:____

Date: _____ Start Time (Military Time) _____ End Time _____ (hr:min) ____:____

Total ____:____

Cause of Event (Check all that apply):

☐ Start Up

☐ Upset Condition

☐ Control Equipment Failure

☐ Shut Down

☐ Scheduled Maintenance

☐ Other _____

Details: Describe in detail what happened. Attach additional sheets if necessary.

Sources Involved: Identify each emission source involved by name and ID number as it appears in the permit. List any control device or monitoring system affected by the event.

Source ID: Description:

Emission Standard Exceeded: Identify each emission standard and permit condition exceeded during the event. Also describe the extent to which each standard or condition was exceeded. List any known or suspected injuries or health impacts.

Standard or Condition

Limit

Exceedance

Emission Reduction: Describe the steps taken to reduce emissions during the event.

Corrective Actions: Describe actions taken to restore the system to normal operation.

Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.

Printed Name: _____

Signature: _____

Phone Number: _____

Date: ____/____/____